

IN THE CLAIMS:

1. (Currently Amended) A fuel injector having a fuel inlet, a fuel outlet, and a fuel passageway extending from the fuel inlet to the fuel outlet along a longitudinal axis, the fuel injector comprising:

a body;

a needle slidably disposed within the body between a first position and a second position; and

a seat disposed at the fuel outlet, the seat including:

a seat surface contiguous to a portion of the needle in the first position to form a seal between the fuel passageway and the fuel outlet, the seat surface being spaced from the portion of the needle in a second position of the needle to permit fuel flow through the fuel outlet, the seat surface being oblique to the longitudinal axis; and

a plurality of passages, each of the plurality of passages having a passage surface extending along a central axis that defines an angle of inclination relative to the longitudinal axis, a portion of the passage surface aligned on the same line with and contiguous to the surface of the seat on a common plane such that each central axis intersects the longitudinal axis.

2. (Withdrawn Per Restriction Requirement) The fuel injector according to claim 1, wherein at least one of the plurality of passages is at a different distance from the longitudinal axis than the other passages.

3. (Original) The fuel injector according to claim 1, wherein at least one of the plurality of passages is at a same distance from the longitudinal axis as the other passages.

4. (Original) The fuel injector according to claim 1, wherein at least one of the plurality of passages has a same cross-section as the other passages.

5. (Withdrawn Per Restriction Requirement) The fuel injector according to claim 1, wherein at least one of the plurality of passages has a different cross-section than the other passages.

6. (Original) The fuel injector according to claim 1, wherein the angle of inclination for at least one

of the plurality of passages is the same as the other passages.

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7. (Withdrawn Per Restriction Requirement) The fuel injector according to claim 1, wherein the angle of inclination for at least one of the plurality of passages is different than the other passages.

8. (Currently Amended but Withdrawn Per Restriction Requirement) A spray pattern of fuel generated by a fuel injector comprising:

a fuel injector including:

a fuel inlet, a fuel outlet, a fuel passageway extending from the fuel inlet to the fuel outlet along a longitudinal axis, a body, a needle slidingly disposed within the body between a first position and a second position, a seat surface contiguous to a portion of the needle in the first position to form a seal between the fuel passageway and the fuel outlet, the seat surface being spaced from the portion of the needle in a second position of the needle to permit fuel flow through the fuel outlet that generates a spray pattern, the seat surface being oblique to the longitudinal axis, a plurality of passages, each of the plurality of passages having a passage surface extending along a central axis that defines an angle of inclination relative to the longitudinal axis, a portion of the passage surface aligned on the same line with and contiguous to the surface of the seat on a common plane such that each central axis intersects the longitudinal axis; and

the spray pattern including:

at least two portions of fuel, the fuel being combustible in a combustion chamber of an internal combustion engine, wherein a first portion includes a fan shape spray of fuel and the second portion includes at least one plume of fuel adjacent the fan shape spray.

9. (Withdrawn Per Restriction Requirement) The spray pattern according to claim 8, wherein the fan shape corresponds to the number of inclined passages.

10. (Withdrawn Per Restriction Requirement) The spray pattern according to claim 8, wherein the fan shape corresponds to a cross-section of each of the plurality of inclined passages.

11. (Withdrawn Per Restriction Requirement) The spray pattern according to claim 8, wherein the fan shape corresponds to the angle of inclination of each of the plurality of inclined passages.

12. (Withdrawn Per Restriction Requirement) The spray pattern according to claim 8, wherein the fan shape corresponds to a distance of each of the plurality of inclined passages from the longitudinal axis.

13. (Withdrawn Per Restriction Requirement) A method of generating a spray pattern from a fuel injector in a direct injection application, the fuel injector having a body, a longitudinal axis, a needle slidingly disposed within the body, and a seat disposed at the fuel outlet, the method comprising the steps of:

providing the seat with a plurality of passages, each of the plurality of passages having a central axis having an angle of inclination relative to the longitudinal axis; and
supplying fuel to the fuel injector so that a spray pattern is formed.

14. (Withdrawn Per Restriction Requirement) The method according to claim 13, wherein the spray pattern has a fan shape, the fan shape corresponds to the number of inclined passages.

15. (Withdrawn Per Restriction Requirement) The method according to claim 13, wherein the spray pattern has a fan shape, the fan shape corresponds to a cross-section of each of the plurality of inclined passages.

16. (Withdrawn Per Restriction Requirement) The method according to claim 13, wherein the spray pattern has a fan shape, the fan shape corresponds to the angle of inclination of each of the plurality of inclined passages.

17. (Withdrawn Per Restriction Requirement) The method according to claim 13, wherein the spray pattern has a fan shape, the fan shape corresponds to a distance of each of the plurality of inclined passages from the longitudinal axis.

18. (Withdrawn Per Restriction Requirement) The method according to claim 13, the spray pattern has a fan shape, the fan shaped spray pattern has a plurality of plumes.

D' 19. (Withdrawn Per Restriction Requirement) The method according to claim 13, wherein at least one of the plurality of passages is at a different distance from the longitudinal axis than the other passages.

20. (Withdrawn Per Restriction Requirement) The method according to claim 13, wherein at least one of the plurality of passages is at a same distance from the longitudinal axis as the other passages.

21. (Withdrawn Per Restriction Requirement) The method according to claim 13, wherein at least one of the plurality of passages has a same cross-section as the other passages.

22. (Withdrawn Per Restriction Requirement) The method according to claim 13, wherein at least one of the plurality of passages has a different cross-section than the other passages.

23. (Withdrawn Per Restriction Requirement) The method according to claim 13, wherein the angle of inclination for at least one of the plurality of passages is the same as the other passages.

24. (Withdrawn Per Restriction Requirement) The method according to claim 13, wherein the angle of inclination for at least one of the plurality of passages is different than the other passages.
